ANNUAL REPORT

of the

CANCER TREATMENT and RESEARCH FOUNDATION

of

NOVA SCOTIA

APRIL 1, 1986 to MARCH 31, 1987

TABLE OF CONTENTS

Chairman's Remarks	1
Foundation Board and Committee Members	2
Medical Staff	3
Report of the Executive Director - Administration	4
Report of the Executive Director - Medical	5
Patient Statistics	6
Clinical Trials Unit	8
Data Processing Department	9
Gynecologic Oncology Division	10
Health Records Department	12
Medical Oncology Department	14
Medical Physics Department	16
Nursing Department	18
Radiation Oncology Department	20
School of Radiation Therapy	21
Technical Department	22
Urology Division	23
Provincial Cancer Registry Annual Incidence Report	24
Financial Statements	36

CHAIRMAN'S REMARKS

Hon. Joel Matheson
Minister of Health
Province of Nova Scotia

Dear Mr. Minister:

I am pleased to report on the Cancer Treatment and Research Foundation of Nova Scotia for the year ending March 31, 1987.

The work load in our Halifax clinic continues to grow, which I believe confirms widespread acceptance of the quality of care given in our clinic. Like most health institutions, we experience manpower problems and financial restraint, both of which sometimes frustrate our progress.

Our physical resources do limit the clinic from any substantial degree of expansion unless additional space is obtained. We are optimistic that this matter will be addressed in the near future.

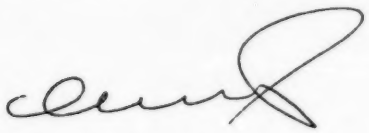
We continue to be agressive in recruiting additional Radiation Oncologists and are optimistic that we can bring this staffing to full complement in due course.

We have made considerable strides in developing a Satellite Clinic in Sydney. We have every reason to believe that we can develop a similar Satellite Clinic in Yarmouth. As you are aware, these Satellite Clinics are an important part of the mandate of our foundation.

Our Foundation continues active participation in clinical research. Basic research continues to suffer from underfunding and it is difficult to have a meaningful thrust in this direction without access to external funding.

In the few short years of the Foundation's existence I believe we have made some substantial advances in Cancer treatment and programming. I am confident that the Foundation will continue to strengthen and develop as an effective vehicle for Cancer treatment and research in this Province.

In closing I would like to acknowlege the contribution of our Foundation and Clinic staff and particularly Dr. D. H. Thompson, our Medical Director and Mr. Harry Churchill, our Administrative Director, who continue to provide leadership and direction to the Foundation.



C. H. Durland
Chairman

FOUNDATION BOARD

Mr. Clare Durland, Q.C. — *Chairman*
Mr. William Gilbert
Mrs. Marlene Grantham
Mrs. Jans Henderson
Mr. Richard O. Isner
Dr. Peter Jackson
Dr. P. M. Lavigne
Major A. G. L. Lawrence (Ret'd)
Mr. Gerald Martin
Miss Shulamith Medjuck
Dr. Emerson Moffitt
Mrs. Mary Ray
Mrs. Norah Stephen
Mrs. Florence Stevens
Dr. W. Carl Tupper

COMMITTEES

EXECUTIVE COMMITTEE
Mr. C. H. Durland
Mr. H. J. Churchill
Dr. D. H. Thomson
Mrs. F. Stevens

FINANCE AND PERSONNEL COMMITTEE
Mrs. F. Stevens — *Chairperson*
Mr. H. J. Churchill
Mr. C. H. Durland
Mr. R. O. Isner
Major A. G. L. Lawrence

COMMUNICATIONS COMMITTEE
Mr. G. Martin — *Chairperson*
Dr. J. Aldrich
Mr. H. J. Churchill
Mrs. S. Hardy
Mrs. J. Henderson
Mrs. M. Ray
Dr. R. Wierzbicki

RESEARCH COMMITTEE
Dr. E. Moffitt — *Chairperson*
Dr. J. Aquino
Dr. A. Pyesmany
Dr. A. Thomson
Dr. D. Thomson
Dr. W. C. Tupper

HALIFAX CANCER CLINIC
MEDICAL STAFF

DERMATOLOGY
Dr. J. Klotz
Dr. J. B. Ross

GYNAECOLOGIC ONCOLOGY
Dr. R. C. Fraser
Dr. J. F. Jeffrey
Dr. M. G. Tompkins

MEDICINE
Dr. B. W. D. Badley
Dr. S. F. Bedwell
Dr. L. Fernandez
Dr. J. D. Gray
Dr. O. A. Hayne
Dr. V. W. Ing
Dr. R. L. Kirby
Dr. P. L. Landrigan
Dr. G. R. Langley
Dr. D. J. MacIntosh
Dr. J. J. P. Patil
Dr. S. K. Robinson
Dr. J. L. Sapp
Dr. W. F. Schlech
Dr. B. L. Sheridan

MEDICAL ONCOLOGY
Dr. R. E. MacCormick
Dr. T. Vanderberg
Dr. D. F. White
Dr. R. Wierzbicki

RADIATION ONCOLOGY
Dr. J. F. Filbee
Dr. B. H. Jo
Dr. K. Singapuri
Dr. D. H. Thomson
Dr. O. S. Wong

SURGERY
Dr. D. C. G. Bethune
Dr. A. Bodurtha
Dr. C. Bugden
Dr. M. T. Casey
Dr. J. H. Charman
Dr. J. P. Curry
Dr. C. H. Graham
Dr. M. Gross
Dr. G. P. Konok
Dr. A. S. MacDonald
Dr. A. C. MacDonald
Dr. S. T. Norvell
Dr. P. Roy
Dr. B. J. Steele
Dr. J. K. Purves

UROLOGY
Dr. R. B. Auld
Dr. S. A. Awad
Dr. P. Belitsky
Dr. W. A. Ernst
Dr. F. G. Mack
Dr. R. D. Schwarz
Dr. S. Yoon

NEUROSURGERY
Dr. R. O. Holness
Dr. W. J. Howes

OTOLARYNGOLOGY
Dr. E. L. Attia
Dr. G. M. Novotny
Dr. F. S. H. Wong

ADMINISTRATION

Dr. D. H. Thomson
- Executive Director - Medical
Mr. H. J. Churchill
- Executive Director - Administration
Miss A. Titus
Mrs. N. Sims
- Executive Secretaries
Mr. G. Hatcher
- Office Manager

Mrs. L. Pearston
Mrs. J. Burns
Miss M. Haase
Miss T. Lipskey
Mrs. K. White
Mrs. B. Spellman
- Support Staff
Mrs. M. Penny
- Cancer Society Patient Services Program

REPORT OF THE EXECUTIVE DIRECTOR - ADMINISTRATION

This Annual Report provides an opportunity for the Foundation to provide information on the activities for the past year and in some areas plans for the future. I am sure all who read this report will find that the staff have been involved in many interesting and rewarding projects.

During the year we employed two additional Medical Oncologists and a Radiation Oncologist. On December 31, 1986 Dr. Murray Cunningham, Radiation Oncologist, retired after many years of service to the Foundation and the Victoria General Hospital.

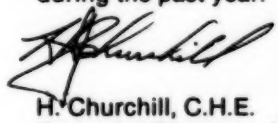
In October 1986 we hosted the annual meeting of cancer agencies across Canada. The meeting was well attended and several topics of interest to all cancer agencies were on the agenda. These included accreditation, cancer registries, information systems, and discussions with representatives of the Canadian Cancer Society. This also provided an opportunity to share information with the other cancer agencies.

The Board established a Planning Committee to review our space requirements. As a result it was determined that we need additional space and discussions are being held with the Department of Health and the Victoria General Hospital.

Meetings have started with St. Rita's Hospital with regard to the establishment of a Cape Breton Clinic. This would allow patients to be seen in Sydeny, who may otherwise be required to travel to Halifax. Our first clinic will commence in the fall of 1987.

The services provided by the volunteers of the Dianna Bleakney Guild and the Canadian Cancer Society are appreciated by the Foundation, but more particularly by the patients and their families. A reception was held in their honor, in the fall of 1986, to recognize the services they are providing.

The staff have recieved many complimentary comments from our patients and their families and friends. The staff provide a concerned and caring atmosphere for the patients who are coming for care and treatment and I would like to take this opportunity to thank each of them. In addition, I would like to express my appreciation to the Board, and in particular our Chairman, Mr. Durland, for their support and guidance during the past year.



H. Churchill, C.H.E.
Executive Director - Administration

REPORT OF THE EXECUTIVE DIRECTOR - MEDICAL

The name Cancer Treatment and Research Foundation of Nova Scotia implies involvement of the Foundation in both patient care and research.

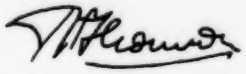
Through the Halifax Clinic the Foundation offers a facility providing both opinion and treatment. The multidisciplinary clinics are working well and provide expertise in all the specialties pertaining to the site or disease.

Dr. R. MacCormick has been added to the Medical Staff of the Department of Medical Oncology. We are still short of staff in Radiation Oncology and every effort is being made to add further well qualified Radiation Oncologists to the staff.

The departmental and divisional reports indicate their activity within the Foundation and reflect that the mandate is being fulfilled.

Clinical research continues to be a major component of the Foundation, but remains limited to funded protocols from the National Cancer Institute and pharmaceutical companies. The Foundation is well represented through the National Cancer Institute Clinical Trials Committees and remains a major contributor in Canada.

There is little doubt that the medical services provided through the Foundation at all levels have been of the highest quality.



D.H. Thomson, M.B., F.R.C.P.(C)
Executive Director - Medical

PATIENT STATISTICS

Foundation Patients Seen At Halifax Clinic
April 1, 1985 - March 31, 1987

Year	New Patients	Number of Patients Visits		
		Clinic	Radiation	Chemotherapy
Apr. 1, 1986 March 31, 1987	2,246	13,935	20,877	1,580
Apr. 1, 1985 March 31, 1986	1,872	12,473	19,777	1,369

Patients Treated By Radiation

Type of Treatment	No. of Patients		No. of Treatment Visits	
	Apr. 1/86 Mar. 31/87	Apr. 1/85 Mar. 31/86	Apr. 1/86 Mar. 31/87	Apr. 1/85 Mar. 31/86
X-Ray	158	154	672	496
Linear Accelerator	649	716	10,066	9,716
Cobalt	973	961	9,848	9,185
Gold Seed	45	50	45	50
Cesium	110	115	125	129
Beta Ray	46	56	46	56
Other (P32, I131)	75	145	75	145
TOTAL	2,056	2,197	20,877	19,777

CANCER TREATMENT and RESEARCH FOUNDATION

Of

NOVA SCOTIA

REPORTS

OF

DEPARTMENTS AND DIVISIONS

CLINICAL TRIALS UNIT

DIRECTOR: Dr. D. White
NURSE: Mrs. Geralynn Hirsch
DATA MANAGER: Mrs. Mary Nolan (started February 1987)
SECRETARY: Mrs. Bernice Chatt
(part-time as of January 1987)

The conduct of clinical trials is an integral component of the work of the Oncology staff of any cancer treatment and research center. Here at the Cancer Treatment and Research Foundation of Nova Scotia, we are fortunate to have a small, dedicated Clinical Trials Unit. The Unit is staffed by a Clinical Trials Nurse, a full-time Data Manager (started February 1987), and a Clinical Trials Secretary (part-time as of January 1987). The staff in the unit are experienced in the conduct of clinical trials research and are able to function independently within the Foundation under the direction of a Medical Oncologist.

Currently the Unit is involved with 19 different clinical trial research projects and as well has 5 pending trials. Cumulative accrual is now well over 370 patients on all studies. There are 4 major investigative Phase III studies which compare new therapeutic modalities versus standard treatment. The Unit is also very active in a large number of Phase II studies. These studies determine the effect of a specific research treatment on various types of cancer. The Clinical Trials Unit also interacts with several different agencies outside the Foundation such as Pharmaceutical companies as well as several multi-institutional Clinical Trials Groups, including the National Cancer Institute of Canada, the Southeastern Cancer Study Group, and the European Organization for Research into the Treatment of Cancer.

The Clinical Trials Unit has been actively encouraging continuing education for the staff. This year Mrs. Hirsch attended the Clinical Trials Colloquim in the Fall of 1986. The staff of the Unit also conducted two inservices within the Foundation, one for the Health Records Department and the other for the Nursing Department.

The future goals of the Unit are:

1. To increase awareness of physicians within the province of the available facilities for cancer research and treatment, thus expanding the role of clinical investigation to all tumor sites and improving quality control of data.
2. To explore the issue of "hard-funding" for the staff of the Clinical Trials Unit as part of the Cancer Treatment and Research Foundation of Nova Scotia's annual budget.
3. To explore the use of pre-programmed computerized clinical trials soft and hardware to streamline the functioning of data transfer.
4. To provide for ongoing continuing education for the Clinical Trials Unit and to ensure excellent quality assurance.

A major goal of the Foundation is to research the problems of cancer. The Clinical Trials Unit has been active in attaining this goal.

DATA PROCESSING DEPARTMENT

Co-ordinator - J. Smith
Data Control Technician - A. Kyte

The 1986 - 1987 fiscal year was relatively quiet for the Data Processing Department with regard to the on-line Patient Information System. No major new applications were added, however, time was used to upgrade our base of statistical data and to refine the existing system to better meet the needs of the Foundation. This "system tailoring" included:

- addition of basic diagnostic data for 1969 - 1978 (using Statistics Canada tapes) giving the Provincial Cancer Registry a comprehensive historical reporting data base spanning the period from 1964 through 1987 inclusive.
- expansion of the on-line Scheduling system to include all full-time and consulting resources working out of the Halifax Clinic along with comprehensive Statistical and Auditing reports.
- implementation of the Annual Incidence Reporting package required by the Provincial Cancer Registry and generation of the Annual Incidence Reports for 1983, 1984 and 1985 (along with the associated "data" tapes for Statistics Canada).
- development and implementation of special data capture and statistical reporting capabilities for two specific site related studies currently underway within the Foundation (Ca. Endometrium and Ca. Lung).
- installations of several new terminals to meet the increasing need for timely system access.
- development of more relevant reporting capabilities, audit processes etc.

Early in the new year the Foundation received word that the Canadian office of CYCARE, our software company, was closing. Although the parent company in the U.S. was assuming responsibility for the support of the Oncology package, this was (and remains) a major cause of concern. The Oncology system was developed for the Ontario Cancer Foundation by the Canadian office and as such, the U.S. branch has little practical knowledge of the associated programs. This area will require close scrutiny over the next few months and decisions will have to be made regarding the future of the system being used. As a result of this closure several outstanding system changes have been put on "hold" pending further investigation.

In response to the general increase of computer usage within the Foundation, the scope of the Computer Advisory Group has been expanded to cover all computer related issues (ie: Word Processing, Microcomputers etc) and it's membership has been enlarged accordingly.

General computer projects included:

- testing and use of an interface developed by the Ontario Cancer Foundation which allows IBM PC's to be linked directly to the Patient Information System. This allows equipment to be used for multiple purposes (ie: Word Processing and Patient Information System access).
- purchase of a MacIntosh computer to aid in the generation of statistical reports (Provincial Cancer Registry Annual Statistics, Special Study requests), presentation data, forms generation, technical schematics, etc.
- establishment of basic guidelines for Word Processing use within the Foundation and training reference procedures for appropriate staff.
- investigation of software/hardware products to meet the research and data management needs of the Clinical Trials area within the Foundation.

Major goals for the 1988 year will be:

- establishment of a 5 Year Plan with regard to the direction of computer systems within the Foundation including the existing Patient Information System package.
- testing and implementation of the Medical Services Reporting package to track a patient's treatment progress within the Halifax Clinic.
- investigation to ways to link existing patient data stored on the Information system to more sophisticated statistical packages available on Microcomputers.
- establishment of more sophisticated Quality Assurance guidelines to monitor and upgrade the quality and quantity of data stored on the Information system on a day to day basis and with regard to historical data.

GYNECOLOGIC ONCOLOGY DIVISION

GYNECOLOGIC ONCOLOGISTS — R.C. Fraser, Head, Division
— M. G. Thompkins, Co-ordinator
— John Jeffrey, NCIC Clinical Trials

The Gynecologic Oncology Division continues to operate two morning sessions each week. These sessions commence at 0830 hours with a follow-up clinic which lasts until noon. Between 1000-1100 hours the Disposition Clinic is held.

The function of the Disposition Clinic is to bring together a multi-disciplinary group of physicians (Gynecologic Oncologists, Radiation Oncologists, Medical Oncologists) to discuss new patients referred with gynecologic cancer or those patients having significant problems in management or with recurrence of their cancer.

STATISTICS

New Patient Visits to Clinic		18
Return Visits to Clinic		2,050
Disposition Visits - New		166
- Return		264
		2, 498
Total Patients By Site:		
Uterus (NOS)	(179)	0
Cervic Uteri	(180)	515
Placenta	(181)	2
Corpus Uteri	(182)	327
Ovary/Fallopian/Lig	(183)	185
Female Gen. (NOS)	(184)	57
Other Sites For Which No Case Was Registered Ex Benign		18
# Patients Seen:		1,104

RESEARCH-EDUCATION

Clinical research continues to be an active endeavor of this Division. During the past year data from the Cancer Treatment and Research Foundation Statistical Banks resulted in the presentation of two papers dealing with uterine sarcomas. These were presented to the Atlantic Society of Obstetricians & Gynecologists at their annual meeting and to the Gynecologic Oncology Society of Canada at its annual meeting.

The same statistical bank has generated data concerning the effects of radiation therapy on women with gynecologic cancer over the age of 75. This information will be presented to the Gynecologic Oncology Society of Canada at its annual meeting in the spring of 1987 by Dr. Peter Grant.

The National Cancer Institute Clinical Trials Group concerned with ovarian cancer continues to develop and implement new treatment protocols. Currently, our Division is very actively involved, under the direction of Dr. John Jeffrey, in the ovarian 6, 7 and 8 protocols. In addition, an experimental research protocol utilizing an experimental drug as secondline treatment in ovarian cancer is also actively being pursued at our centre under the direction of Dr. John Jeffrey.

Mrs. Mary Trott, the Division's Nurse Co-Ordinator, continues to be primarily responsible for data retrieval within the ovarian cancer clinical trials. She functions both in the hospital's Gynecologic Oncology Unit and the outpatient facilities located in the Foundation. Mrs. Trott attended a colloquim in Clinical Trials in Halifax in October, 1986.

Projected for study during the 1987-88 year are borderline ovarian cancers and endometrial cancer. Data has been accumulated in an ongoing computerized program between the Department of Gynecology and the Cancer Treatment & Research Foundation of Nova Scotia. This was instituted by Dr. Carl Tupper several years ago and Dr. John Jeffrey continues to co-ordinate it. A resident on the Gynecology Service will be bringing this data forth and a presentation will be available by the spring of 1988.

MANPOWER

The Division of Gynecologic Oncology now has three Gynecologic Oncologists working at its centre. This Division serves as a referral base for New Brunswick, P.E.I. and Nova Scotia. Dr. Peter Grant is now in his 2nd year of a post graduate Fellowship which will be completed on June 30, 1987. While doing his Fellowship, he spent two months in the Department of Radiation Oncology of the Cancer Treatment & Research Foundation acquiring the basic principles of radiation therapy from the staff and technicians. He found this a very rewarding and worthwhile experience.

PARAMEDICAL SUPPORT SERVICES

The Division of Gynecologic Oncology within the Foundation continues to promote and provide necessary support services for our patients. These include such services as nutritional counselling, social services assessment and the participation of volunteers, both of the Nova Scotia Division of the Canadian Cancer Society and the Diana Blakeney Guild. In addition, the enterostomal therapy group at the Victoria General Hospital is playing an increasing role in the function of our clinic, providing a service which is most beneficial to our patients.

We continue to encourage our support staff to suggest new ways in which we can provide better service for our patients. As we continue to explore and develop the concept of continuity of care between our Foundation Follow-up and Disposition Clinics, and our in-patient Victoria General Hospital Gynecologic Oncology Section, it is apparent that increasing support services will be required to provide the necessary care for our patients and their families. We continue to strive towards the acquisition and application of such services.

REGIONAL CLINICS

The Division of Gynecologic Oncology in association and cooperation with the Administration of the Cancer Treatment & Research Foundation and the Executive Director of St. Rita's Hospital is nearing completion of its proposed regional clinic to be located in Cape Breton at St. Rita's Hospital. We look forward to an early startup date in the fall of this clinic, which will be designed as primarily a follow-up clinic for patients having had gynecologic cancer from that area. In establishing this clinic, both the Division and the Foundation felt it pertinent to ensure that services available within the Foundation are also available at its regional clinic. In addition, involvement of selected gynecologists to participate in this regional clinic has been established. The clinic will be staffed by physicians from the local area as well as from the central referral Cancer Treatment & Research Foundation facility in Gynecologic Oncology.

ADMINISTRATION

The Division of Gynecologic Oncology continues to be active in its role of developing this subspecialty to provide increasing levels of patient care for women in Nova Scotia afflicted with gynecologic malignancy. Members of this Division are actively involved in numerous committees of the organization as well as other National and International associations dealing with gynecologic cancer.

HEALTH RECORDS DEPARTMENT

Staff:	Clinic and Provincial Cancer Registry (R)
Health Record Administrators:	Thelma Croucher, Head Beverley Kaulback, Supervisor Jean James (R) Karen Starratt
Health Record Technician:	Glenys Jackman
Medical Secretaries:	Michelle Dempsey Bertha Furlong Murdell Hall Barbara Hunter (started Sept. 5/86) Florence MacKenzie Sheila Richardson (Apr 1/86-Oct 3/86) Dale Tibbo (transferred from Medical) Transcription Area (Oct. 6, 1986) Elizabeth Ypelaar (Apr 1/86 to Aug 29/86)
Medical Transcriptionist:	Catherine Abbott (started Nov 1/86) Dale Tibbo (part time Apr 1/86-Oct 3/86)
Department Secretary:	Jane Brown (started June 16/86) Yvonne VanDyk (Apr 1/86-June 13/86)
Clerk Typists:	Joyce Christie Ann Cooper Catherine Crouse (started Aug. 25/86) Linda Eisenhauer (Apr 1/86-Sept 5/86) Arlene MacDonald (Apr 1/86-Sept 8/86) Beverley MacMillan Tracey Robertson Clerise Smith (R) Rosalee Walker (R) Connie Woodland
File Clerk:	Brenda Redmond

GENERAL DEPARTMENTAL ACTIVITIES

During the '86-'87 fiscal period, there were a number of staff changes and the long term staff spent considerable time training. This led us to carefully evaluate our present staff orientation program. My supervisor and staff will be actively involved in developing a program for departmental use and it will be operational in the next fiscal period.

Development of additional computer applications were limited. Our department spent time in review and, where necessary, upgrading procedures to ensure current Foundation standards were being met by our department for chart-related procedures.

As appropriate educational programmes became available, staff in almost all areas attended workshops /seminars to keep up-to-date with current trends. To facilitate interdepartmental communications, other Foundation departments' staff spoke to our department regarding their role in the Foundation.

Departmental policies were developed and implemented and a few are listed below:

- Signing & distribution of Clinic Progress Notes & Letters
- Physician Scheduling Changes and Additions
- Physician Initialling of Reports
- Retention and Storage of Records of expired Cancer Foundation Patients
- Documentation required for Chemotherapy patients
- History & Physical Report (completed on all initial clinic referrals)
- Enrolment & Admission to Clinic

The department was involved with the planning for a satellite Gynecology clinic in Cape Breton. It is planned that this will be operational in the next fiscal year.

Our department is involved with the following committees:

- Health Records Committee
- Computer User Group (inactive since Jan/87)
- Operational Advisory Committee
- Health & Safety Committee
- Computer Advisory Committee
- Provincial Cancer Registry Committee

RECEPTION AREA

Even with the diversity of activities handled by this area, it continued to provide the patient with an efficient, reassuring atmosphere. All clinic/doctor schedules are on the computer system which greatly facilitates booking of patient appointments.

The use of an Admission/Separation Form for improving patient and information flow, has been of benefit within the clinic; revisions to this are in the planning stages. An answering machine was installed to give number information for after hours calls.

During the fiscal period, staff interviewed 2,737 patients, the admitting clerk greeted and, where necessary, obtained updated information on 13,256 patients, and the scheduling clerk issued 13,466 patient appointments as a result of clinic visits.

RECORDS OFFICE

Our staff complement in the Records Office remains at 1 HRA, 1 HRT, 4 Clerk-Typists and 1 File Clerk. A policy governing all incoming reports being initialled by the responsible clinic physician, is in the pre-implementation stage. As part of the case registration process, neoplasm grading data is included on an ongoing basis. To better utilize space and personnel activities, work areas were relocated. The present area for doctor/chart review proved inadequate. This remains an area to be addressed. There is adequate on-site file space for all active records for the current fiscal period. The process of sending expired patient records to off-site storage continues and is operating very well.

A regular flow of research requests is handled by our Health Record Administrator and Technician.

The following statistics illustrate our Records Office activities:

59,836 charts handled; 1,603 new clinic charts created.

MEDICAL SECRETARIAL/MEDICAL TRANSCRIPTION AREA

We have a staff complement of six secretaries, however with the increased workload, a full time medical transcriptionist position is required to assist with chart-related typing. Our lines transcribed increased from 300,000 lines in'85-'86 to 420,000 lines in '86-'87.

Word processing using Word Perfect software was implemented for secretarial duties and training for all staff should be complete early in the next fiscal year.

Discussion, has begun to establish a Medical Transcription area to do all chart-related typing. Planning and development on this project will continue in the '87-'88 fiscal period.

PROVINCIAL CANCER REGISTRY

For the staff of 1 HRA and 2 Clerk-Typists, this was a year of positive changes for the Registry.

Direct enrolment and case registration for incoming pathology reports became a reality. Previous registration was done mainly from completed Provincial Cancer Registry forms. During this fiscal period 7,272 Pathology reports and 4,200 Registry Forms were received.

The reactivation of the Letter Follow-up became a reality and there has been an excellent response rate from the medical community. At the present time, this is manually run but it is planned to have it system driven in the next fiscal period. It is also planned to provide an area on the system to capture survival data received on the returned Follow-up letters.

The 1985 Provincial Cancer Registry Incidence data was published in the Foundation's Annual Report for the first time. The 1986 Incidence data should be available early in the next fiscal period for publication.

The Registry was involved in numerous studies and is currently participating in the National Case Control Study on Thyroid Cancer. In November 1986, the staff prepared a very informative display for the NSAHO Exhibit whose theme was "Practicing Partnerships."

MEDICAL ONCOLOGY DEPARTMENT

HEAD: Dr. D. F. White, M.D., F.R.C.P. (C), Medical Oncologist

MEMBERS: Dr. R. Wierzbicki, M.D., F.R.C.P. (C), Medical Oncologist

Dr. T. Vandenberg, M.D., F.R.C.P. (C), Medical Oncologist

Dr. R. MacCormick, M.D., F.R.C.P. (C), Medical Oncologist

Medical Oncology manpower continues to grow, allowing increased involvement of the Department in the service, research, and educational function of the Cancer Treatment and Research Foundation:

1. **Service**

The process of subspecialization of the service function, so important in the realization of the mission of the Foundation and multidisciplinary clinic setting, continued with the arrival of Dr. T. Vandenberg in July 1986 and Dr. R. MacCormick in January 1987. At the present time Medical Oncologists have been designated with special expertise in Thoracic Oncology, Sarcomas, Head and Neck, Breast Cancer, Urological Cancer, Lymphomas and Gastrointestinal Malignancies as well as Gynecological Cancers.

The Department continues to supply an important consultative service in the three Halifax hospitals.

Within the Victoria General Hospital, the guest hospital for the Foundation, the fragmentation of service and lack of a committed Unit of Oncology continues to impede the ideal interaction of the hospital and the Foundation Clinic and the provision of the most efficient care for patients.

Outside of Halifax the Department continues to play a major role in the Outreach Program as it applies to continuing care for patients in their own community. With the continuing cooperation of local physicians and surgeons this important area of development has been strengthened by both clinical trials development and the process of continuing medical education in which the Department participates.

Medical Oncology activities have intensified pressure in the Facility which occasionally leads to difficulties in function. Further development of site-oriented clinics in which Medical Oncology has played a major role, may well lead to efficiency of scheduling which can relieve some of the pressure.

The service function would be compromised without the excellent support of the Department of Nursing and their involvement in cancer chemotherapy administration. The outpatient continuous infusion chemotherapy program using portable pump is an example of the cooperative development.

2. **Research**

The Clinical Trials Unit (CTU) is an integral component of the Medical Oncology Department. The development of the CTU office has led in the past year to an increase in both the number of trials activated and the quality of data collected. Medical Oncologists participate at the national level in decision making and conceptual efforts in the development of new trials with the National Cancer Institute of Canada. Dr. D. White is a member of the Myeloma Committee and the Quality Assurance Committee of the Clinical Trials Program. Dr. R. Wierzbicki is a member of the Investigational New Drug Committee, Lung Cancer Committee, and Sarcoma Committee. He is also Chairman of the Phase II Tumor Necrosis Factor Study in Renal Cell Carcinoma and designed Chairman of Phase III Small Cell Bronchogenic Carcinoma Interferon Maintenance Study. Dr. T. Vandenberg has been appointed to the National Cancer Institute of Canada Breast Committee and Lymphoma Committee. Dr. R. MacCormick is a member of the Gastrointestinal Malignancies Committee of the National Cancer Institute as well as the Quality of Life Committee.

There has also been an increase in the level of involvement in clinical trials sponsored by the Pharmaceutical industry. Dr. White has been appointed to the Research Advisory Group of Adria Laboratories of Canada, a company with interest in Canadian research and development in cancer care. Important financial support of clinical research has been forthcoming from a number of other firms including Bristol Myers, CIBA, ICI, Lederly, Scherring, etc. This financial support, in terms of restraint by government, continues to be appreciated by those involved in clinical cancer research.

3. **Education**

The Department has been involved in a number of educational pursuits.

A. **Medical**

1. Undergraduate
2. Postgraduate

(a) Hematology/Medical Oncology Division Department of Medicine, Dalhousie University:

The residents from the Division are involved in patient management both in a consultative role in Halifax hospitals and in the Halifax Clinic.

(b) Medical Education:

Dr. White has visited with physicians and surgeons in Amherst, Annapolis Royal, Antigonish, Bridgewater, Kentville, Inverness, Sheet Harbour, and Yarmouth to discuss cancer care, cancer chemotherapy, and medical oncology.

(c) Guest Speakers:

The Department has played a role in cooperation with the Division of Hematology/Medical Oncology, Department of Medicine and the Department of Radiation Oncology in bringing important guest speakers to the Foundation and to Halifax.

B. **Nursing**

The Department initiated the process of education for nursing in cancer chemotherapy. This process and the subsequent accreditation from the Registered Nursing Association of Nova Scotia is utilized both within the Foundation per se and also within the province to provide an important cadre of nurses with expertise in cancer chemotherapy. Thirty-three nurses have been trained within the province and sixteen within the clinic.

C. **Administration**

1. The Free Drug Program sponsored by the Department of Health for the funding of intravenous cancer chemotherapy agents to designated hospitals is administered by Dr. White.
2. The process of standardization of chemotherapy treatment programs used within the Foundation is an ongoing process which will hopefully lead to a published documentation of that policy.
3. Clinical Trials office.

D. **Future**

From a single Medical Oncologist in 1983 the Department has, with the support of the Board and the Department of Health, continued to expand, presently numbering four Medical Oncologists - the critical mass for a viable Department with full potential to provide service leadership, clinical research involvement, and important educational focus.

MEDICAL PHYSICS DEPARTMENT

Director
Dr. John Aldrich

Senior Physicist
Dr. John Andrew

Physicists
Mr. Fan-Shih Chen
Mr. Cupido Daniels
Dr. Stuart Jackson
Mr. N. Kulkarni
Dr. B. MacParland

Ass/t Radiation Safety Officer
Mrs. Pauline Jones

Secretary
Mrs. Sandra Fox

Treatment Planning Technologists
Mrs. Joleen Orr
Mrs. Linda Purcell

Machinist
Mr. Ian Porter

Radium Curator
Mrs. Peggy Wilson

Mould Room Technologist
Ms. Alice Verge

Electronics Technologist
Mr. George Matthews

A review of quality assurance for the five radiotherapy machines, the simulator, the radiotherapy treatment planning computer and the various dosimetry systems has enabled us to develop a comprehensive quality assurance program. This review was concurrent with but partly due to radiation accidents which occurred with the Therac-25 in other centres. Due to this the Theac-25 was removed from service because of a manufacturer's recall for 10 weeks beginning in February, 1987. The Department was intimately involved at a national and international level in reviewing the problems which have occurred with this machine and in developing new safety systems and protocols.

In the treatment planning area there has been a substantial increase in workload with 25% more simulations being performed than the previous year and 21% more computer-generated treatment plans. The change in workload has emphasized the need for a new radiotherapy simulator and updating of the radiotherapy treatment planning computer system. Problems with scheduling patients and collection of relevant data for this important process of planning the patient treatments has caused concern and with the other departments in the Foundation solutions are still being sought.

As part of our continuing review of safety procedures, new radiotherapy room door interlocks are being installed. These new door interlocks eliminate the possibility of accidental irradiation of personnel in the treatment room itself. A complete re-evaluation of the electron beams from the Therac-25 was carried out by Dr. Brian MacParland, and he also developed an electron beam treatment planning program which is now in routine use. Improvements have also been made to the computer program which is used for the checking of the treatment charts on a regular basis.

Despite some difficult problems from time to time the Selectron remote afterloading system is being used for most of the gynaecological malignancies which are being treated. Also, a few patients have been treated for esophageal malignancies using a special applicator with the Selectron afterloading system.

Work continues to proceed on the development of an ultrasound thermography system for eventual use in the treatment of cancer by hyperthermia. This is the second year of a major grant from the National Sciences and Engineering Research Council and is a collaboration between Dr. H. Jones of the Technical University and the Foundation. A grant was also awarded from the Medical Research Council to continue for a further two years work on the development of a dosimetry system using electron spin resonance. This grant has a value of $48,000 over two years.

Staff were involved in the room design and acceptance testing of a number of units in radiology. These included two new cardiac suites, a lithotripter "stone crusher" machine and a new neuroradiological angiographic suite. In Nuclear Medicine a new tomographic gamma camera and associated computer system were installed.

Lunch time Medical Physics seminars have continued on a monthly basis with variable attendance from other departments and we have continued to be involved with the teaching of radiology residents and technologists in Radiotherapy, X-Ray, Nuclear Medicine and Ultrasound.

With the change over of medical physicists over the years, it is becomming increasingly apparent that a training program is required to train our own personnel. This type of program will be beneficial for and complimentary to a residency training program in Radiation Oncology.

We were pleased to welcome two new staff to our Department. Dr. Brian MacParland joined us from Princess Margaret Hospital and Ms. Alice Verge transferred to us from the Technical Department.

Staff were involved in a number of national meetings and conferences. The following articles and presentations was published and presented by the group during the year.

PUBLICATIONS (1986-1987)

1. S. A. Jackson
   The Renal Washout Parameter as an Indicator of Transplant Rejection. European Journal of Nuclear Medicine 12, 86-90, 1986.
2. Pass, B. and Aldrich, J. E., In Vivo Dosimetry, J. American Association of Medical Dosimetrists, 11, 7-9, 1986.
3. Aldrich, J.E. and Pass, B., Dental Enamel as An In Vivo Dosimeter: Separation of the Diagnostic X-Ray Dose from the Dose Due to Natural Radiation, Journal Radiation Protection Dosimetry, 17, 175-179, 1986.
4. Aldrich, J. E. and Pass, B., Determination of the Radiation Exposure from Nuclear Accidents and Atomic Tests Using Dental Enamel, to be published in Health Physics, 1987.
5. Aldrich, J. Development of a Hospital Radiation Emergency Protocol, to be published in CAR, 1987.

PRESENTATIONS (1986-1987)

1. Radiation Protection During Cardiovascular Procedures, C. Daniels,
   49th. Annual General Meeting of the Canadian Association of Radiologists Halifax, June 1986.
2. High Contrast Evaluation of Image Intensifiers,
   C. Daniels, D. Burgess and P. LeBrun
   49th. Annual General Meeting of the Canadian Association of Radiologist Halifax, June 1986.
3. CT Dose Profiles by Film Densitometry,
   C. Daniels, D. R. Campbell and S. G. Matthews
   49th. Annual General Meeting of the Canadian Association of Radiologist Halifax, June 1986.
4. Fluoroscopy for Positioning - Is it Justifiable?
   C. Daniels,
   Annual Scientific Meeting of Atlantic Radiologists Halifax, October 1986.
5. Aldrich, J. E., "Nuclear Magnetic Resonance Imaging", I.E.E.E., Halifax, March 21, 1986.
6. Aldrich, J. E., Berry, J., Filbee, J. F., Jones, H. W. and Mieskowski, M., "Temperature Measurement in Clinical Hyperthermia Using Ultrasound Phase Tomography", Canadian Association of Radiology Annual Meeting, Halifax, June 1986.
7. Aldrich, J. E. and Pass, B., Dental Enamel As An In-Vivo Dosimeter: Separation of the Diagnostic X-Ray Dose From the Dose Due to Natural Radiation, 8th, International Conference on Solid State Dosimeter, Oxford, August 1986.
8. Pass, B. and Aldrich, J. E., Dental Enamel As An In-Vivo Radiation Dosimeter, Canadian Dental Association Annual Meeting, Halifax, (1986).
9. Andrew, J., C. Schaber and J. E. Aldrich, "An Automated System for the Production of Tissue Compensators for Radiotherapy, Canadian Assoc. of Radiologists and the Division of Medical and Biological Physicists of the CAP Annual Meeting, Halifax, (1986).
10. M. Brothers, B. Byrne, S. Jackson, D. Fraser, Early Experience with the Meditech M250 CT Scanner: Installation, Characteristics and Performance in Neuroradiological Application. Presented to Canadian Association of Radiologists June 1986.
11. J. Saliken, S. Jackson, D. R. Campbell, D. Fraser, Preliminary Clinical Evaluation of the Meditech M250 CT Scanner for Abdominal Application. Presented to Canadian Association of Radiologists June 1986.
12. D. Precious, S. A. Jackson, J. Aldrich and D. McKenna, Measurement of Blood Flow Changes in the Human Maxilla During LeFort 1 Osteotomy. Presented at Dalhousie University Faculty of Dentistry Research Seminar, March 1986.
13. S. A. Jackson, L. Ehrlich, R. Martin, D. Johnstone, L. Lalonde, The Effect of Image Display Methods in the Evaluation of Left Ventricular Wall Motion RSNA 1986.

NURSING DEPARTMENT

Director of Nursing: Jean Darley-Dickson

Head Nurse: Elizabeth Gibbs

R.N.'S: Jasmine Buisseret
Anna Cake
Trudy Gordon
Barbara Grant
Anne Hammer
Donna Luther
Romano MacAskill
Diane Russell
Margo Stewart
Luella Woods

Unit Clerks: Helena Burrell
Bonny Osgood
Susan Trask

Unit Aide: Beverly Pippy

STAFFING:

Anne Hammer filled the newly created Head Nurse position on an interim basis until Elizabeth Gibbs' appointment to that position in June 1986.

ROLE:

The manifestation of cancer and it's treatment have a profound effect on the individual and his/her family. Thus, the role of the Oncology Nurse demands a comprehensive holistic approach geared towards assessing the unique coping mechanisms of each individual patient and family.

Considerable demands are placed upon nursing staff in order to provide physical care as well as optimal emotional support - both crucial elements throughout the course of patient care and treatment.

OBJECTIVES:

The overall objectives of the Nursing Department include:

- to practice nursing as defined by the Registered Nurses Association of Nova Scotia
- to assist patients/families to cope with the various phases through which patients may pass as they encounter the stresses induced by cancer.
- to provide staff development through inservice and continuing education.
- to assist in the conduct of clinical trials.
- to initiate nursing research aimed at improving patient care.

ACCOMPLISHMENTS

Refurbishing of Patient Inverview Room:

The stark furnishings of the former interview room did not depict the warmth and caring the Foundation staff wishes to express. In May, two members of the Nursing Department transformed the interview room into a more comfortable, restful atmosphere which more accurately reflected a caring atmosphere.

Nursing Documentation:

It was identified that there was a need for a more comprehensive nursing assessment aimed at a holistic approach to patient care. An extensive assessment tool was developed and implemented on a trial basis and subsequently adopted for use for all new patients within the Medical Oncology Clinic. Application of this instrument to other appropriate clinic areas will be addressed in the future.

Establishment of Policies and Procedures Committee:

In June 1986 a Policies and Procedures Committee was struck. Specific departmental requirements were defined and to date the committee has finalized and implemented a total of 26 policies and procedures. This committee will continue to meet bimonthly until completion of all procedures and then monthly to update and revise existing procedures as necesary.

Quality Assurance - Chemotherapy:

The purpose of any quality assurance program is to measure the quality of the work using set standards. Comprehensive nursing policies and procedures encompassing the preparation and administration of chemotherapeutic agents were established. These serve as the foundation for a quality assurance program within the chemotherapy area of the department.

Patient Education:

The Nursing Department has been working with the Dietary Department of the Victoria General Hospital in an attempt to meet the nutritional information requirements of our patients. A video has been purchased an a nutritional packet developed for general use within the clinic. Future plans consist of developing educational packets specific to the chemotherapy and radiotherapy areas as well as a nutritional display booth for the main waiting area.

Primary Nursing Trial Demonstration:

Primary nursing has been defined as a nursing care system which provides for a one-to-one relationship between patient and nurse. It is a design concept which incorporates authority, autonomy and accountability as intrinsic in maximizing the effectiveness of nursing care.

Results confirmed more comprehensive individualized care could be provided with the establishment of a one-to-one nurse/patient relationship. Budgetary provision, however, did not exist for continuation or expansion to accommodate this method of nursing care.

Nursing Research:

Efforts have been directed toward working with the Canadian Cancer Society in developing a research project aimed at assessing the needs of patients attending our clinic. Data collected will be used to assist in the development of patient education programs to supplement the individualized patient education currently being provided by physicians, nurses and other health professionals. The project will consider the patients' physical status, treatment courses, emotion response to illness, emotional/physical support mechanisms as well as educational and economic status.

In November 1986, Jasmine Buisseret and Allison Buntain were involved in the implementation of primary nursing within the Thoracic Oncology Clinic in an attempt to determine the feasibility of this system of delivery of nursing care within this and other areas of the clinic.

Staff Development:

During 1986 a broad spectrum of topics were covered in the biweekly staff inservices. Some of the topics include - oncology emergencies/urgencies, pain mangement, port-a-cath system, CanSurmount, primary nursing, role of hospice nurses, dietician, enterostomal nurses, clinical trials nurse, breast cancer, human sexuality, nutritional supplements, fire and security, quality of life and effective communication skills.

Various conferences/courses were attended by staff.

RADIATION ONCOLOGY DEPARTMENT

PROFESSOR OF UNIVERSITY DEPARTMENT
D. H. Thomson, M. B., Ch.B., D.M.R.T., F.R.C.P.(C), F.A.C.R.

HEAD, DEPARTMENT OF RADIATION ONCOLOGY
J. F. Filbee, M.B., B.S., D.M.R.T., F.R.C.P.(C)

RADIATION ONCOLOGISTS
O. S. Wong, M.D., F.R.C.P.(C)
B. H. Jo, M.D.
K. Singapuri, M.D.

Activity in Radiation Oncology continued at a high level in 1986 to 1987. A total of 1,295 new patients were seen resulting in an average of 82 patients on treatment per day.

We were sorry to see a major change in staff with the retirement of Dr. R. Murray Cunningham. Dr. Cunningham had been Director, Department of Radiation Therapy in the Victoria General Hospital from 1965 until the start of the Cancer Treatment Foundation.

During the year, Dr. John Filbee was appointed Acting Head of the Department until a new Department Head joins us. Active search is underway to fill this position.

Early in 1987 there was considerable concern with the 25 million volt linear accelator. This has given no trouble in our Unit but models in other centres have experienced serious malfunctions. Major modifications both in the control and operating systems of the machine have been designed cooperatively between the users and the manufacturer of the equipment. At years' end, it was expected that this will result in the Therac 25 continuing to be the most powerful and reliable instrument in The Foundation. (This was subsequently achieved.)

Other treatment equipment has continued to function well although our two cobalt units have been in service for many years. They continue to be very reliable but their replacement must be foreseen within a very few years.

The treatment planning system continues at a high level of complexity. The X-ray simulator functions well, however its functions are severely limited compared to up-to-date equipment.

Radiation Oncology In-Patient Service at the Victoria General Hospital continues to be very active. Consultative Service continues to all teaching hospitals in Halifax as well as the Canadian Forces Hospital.

Radiation Oncology Department continues to participate in extensive clinical trials, many multi-institutional under aegis of the National Cancer Institute or other National and Multi-National Groups. Dr. O. S. Wong continues to participate in Clinical Trials in Pediatric Oncology. Hyperthermia research continues. The Clinical Trials (centered at the Halifax Infirmary) is complemented by basic research into non-invasive thermometry with the Engineering Physics Department of TUNS.

Teaching in the Faculty of Medicine continues. In addition to general lectures to second and third year classes, Radiation Oncology tutorials are held with all GYN Clinical Clerks and Internal Residents Teaching continues. Electives for Undergraduates and Interns are also used. Final year Dental Students continue to attend the Cancer Foundation for exposure to Oncologic problems.

Department Members serve on committees of The Canadian Association of Radiology, Canadian Oncology Society and Oncology Physicians and Surgeons of Canada, and Federal Health Committees. Participation has also been held in the formation of the Canadian Association of Radiation Oncology which held its inaugural meeting in Halifax in August 1986. Presentations were made to the scientific sessions of the Canadian Association of Radiologists in August 1986. Representation continues on committees of the Victoria General Hospital and the Faculty of Medicine.

SCHOOL OF RADIATION THERAPY

Instructor:	Janet Garrison
Graduates:	Cathy Usher Paul Ellswoth
Senior Students:	Carol-Anne Jennex Helen Phalen
Junior Students:	Alma van de Riet Lesley Adcock Penny Edmonds

The training program for Radiation Therapy technologists remains at 24 months commencing in September of each year. The program is divided into clinical and theoretical. The theoretical portion of 24 weeks' duration is divided into three session and students attend these didactic sessions at the School of Radiotherapeutic Technology in Toronto. The clinical training plus supplementary didactic sessions are received at the Halifax Clinic.

In April 1986, Mrs. Garrison attended the Annual Liaison Committee Meeting (Ontario Cancer Foundation and Affiliate Clinics) at the Princess Margaret Hospital, Toronto. This meeting enables participating clinics to have direct input to the didactic teaching program offered at the Princess Margaret Hospital and affords the opportunity for the relevant exchange of ideas on training. Prior to this meeting, Mrs. Garrison attended a one day workshop entitled - "Communication Skills with Students". During November, 1986, Mrs. Garrison attended a two day Clinical Instructors Workshop to develop an evaluation format for use in all Radiation Therapy Training Programs. The workshop met its objective and was a great success.

The senior students attended the Spring N.S.S.-M.R.T. Education Seminar and Annual General Meeting held at the Sydney City Hospital, Sydney, Cape Breton. The N.S.S.M.R.T. therapy student essay competition was won by Cathy Usher. Cathy's paper entitled "Support for Cancer Patients in Nova Scotia" was presented at the seminar.

During September 1986, Cathy Usher and Paula Ellsworth graduated from the training program and wrote the C.A.M.R.T. certification examinations. Cathy joined the team of staff technologists at the C.T.R.F. of N.S. while Paula accepted a therapy technologist position in St. John, New Brunswick.

The Conjoint Committee on Accreditation scheduled an on-site survey of the training program for November 6, 1986. I am pleased to report that the training school was granted full accreditation (5 years).

The student selection process commenced once again in January with the screening of approximately 90 applications, Of these, 40 met the academic prerequisites and were requested to come for a personal interview. The three students exhibiting the greatest potential for success were accepted into the September 1987 training program.

The senior students did rotations to the Radiology, Nuclear Medicine and Cytotechnology Departments of the Victoria General Hospital to observe the procedures used in other disciplines associated with the cancer patient. Also the students from these departments spent a day observing technical procedures at the Halifax Clinic.

Continuing Education Seminars within the Cancer Foundation such as:

- monthly Medical Physics seminars
- monthly Technologist sessions with the Physics Department to exchange and communicate development of new techniques
- weekly Nursing seminars
- special lecture presentations

have proved very beneficial to students and staff of the training program.

TECHNICAL DEPARTMENT

Chief Technologist	Lynda Burgess
Supervisor	Carleen Wagner
Technologists	Bonnie Eldershaw Kim Day Nancy Alexander Debra Sawatsky Gwen Cottreau Christie Stevenson Maureen Urquhart Cathy Usher Laurie Hawbolt

The Technical Department functions as an integral part of the medical team. The modality of treatment utilized is ionizing radiation or high energy x-ray units. Radiation is used for the treatment of malignant disease, however, benign conditions are treated.

Our department has five radiation units -- 2 cobalt, 1 deep/superficial x-ray unit 2 linear accelerators (A.E.C.L. Therac 6 and Therac 25 with 7 selections of electron therapy) Electron therapy provides the patient with excellent skin sparing effects.

Radiation treatment services are provided to approximately 1,600 patients per month whose status at commencement of therapy was hospitalization.

Rearrangement of the radiation area has permitted the establishment of a reception reporting area for the patient. This allowed for familiarization of the outpatient and the family unit on a daily basis. The inital stages of a patient scheduling system was introduced to help minimize patient waiting time for radiation therapy.

Educational opportunities have been continued allowing staff to keep abreast of patient care and physics technolgoy. The introduction of new technical rotations have permitted technologists to improve their awareness of complete patient care.

Our objective is to administer radiation treatment to the patient for their disease. However, technologists will continue to focus their energy toward the total care of the patient and the family unit.

UROLOGY DIVISION

Dr. P. Belitsky
Dr. R. B. Auld
Dr. S. A. Awad
Dr. W. A. Ernst
Dr. F. B. Mack
Dr. R. D. Schwarg
Dr. S. Yoon

The Urology Department maintained an active clinic in the C.T.R.F. There were 483 clinic visits for 1986 patients with urologic cancer. Forty-four new patients were seen during the year. There were 18 new patients with bladder cancer referred for intravesical BCG treatment as propylaxis against frequent recurrences of their superficial bladder cancer. The results of this BCG study as presently being evaluated by the preliminary data indicates a significant reduction in the bladder tumor recurrence rate with this treatment.

The Wednesday morning Urology Clinic continues to be a site for active teaching of medical students and residents. The clinic has also become a centre for follow-up and management of cancer of the testicle, with 52 patients who have this relatively uncommon cancer being followed regularly through the clinic.

PROVINCIAL CANCER REGISTRY

ANNUAL INCIDENCE REPORT

January 1, 1986 - December 31, 1986

PROVINCIAL CANCER REGISTRY

DIRECTOR	Dr. D. H. Thomson
HEAD, HEALTH RECORDS	Mrs. T. Croucher, CCHRA(C)
STAFF	Jean James, CCHRA(C) Clerise Smith (April/86 - June/86) Tracey Robertson (started July/86) Rosalee Walker

PROVINCIAL CANCER REGISTRY COMMITTEE

CHAIRMAN	Dr. Lucy Wynn (April/86 - August/86) Dr. Eric Mintz (started August/86)
MEMBERS	Dr. D. H. Thomson Dr. P. Lavigne Mrs. T. Croucher Mrs. J. James

1986 CANCER INCIDENCE REPORT

TABLE OF CONTENTS

Report of the Provincial Cancer Registry	26
Primary Sites with Age Breakdown - Males	27
Primary Sites with Age Breakdown - Females	28
Incidence of Cancer Within Age Groups - Males	29
Incidence of Cancer Within Age Groups - Females	30
Age Distribution Tables (Used in 1986 Incidence Calculations)	31
Reported Cases by County - Males	32
Reported Cases by County - Females	33
Principal Primary Sites - Males	34
Principal Primary Sites - Females	35

REPORT OF THE PROVINCIAL CANCER REGISTRY

This report differs from previous ones as age adjusted incidence rates are used to assess the impact of cancer on the provincial population instead of the previous crude incidence rates (unadjusted). Crude incidence rates reflect both the individual risk of getting cancer and the **age distribution of the population.** The population age distribution affects these rates since the risk of cancer generally increases sharply with age, resulting in comparisons of cancer risk between populations being tenuous. For example, there may be a county with an older population that has a higher rate (crude rate) of cancer than a younger county. The younger population in the second county could explain part or all of the cancer deficit here. The effect of age must be removed by the use of age adjusted incidence rates in order to determine if the lower rate is due to an actual lower cancer risk.

Provincial rates were standardized using the 1981 Canadian population; county rates were standardized using the 1981 Nova Scotia population.

Age adjusted rates would be interpreted as follows:

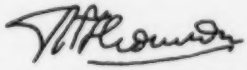
The Lunenburg County adjusted cancer rate is the cancer rate that Lunenburg County would have experienced if it had the same age distribution as the standard indicated (N.S. 1981).

Similarly, when we compare the provincial cancer incidence rates to those in the past, we must adjust for age so that the aging of the population with time is taken into account. We then may obtain a clearer picture of the changing risk of cancer over time in this province. These age adjusted rates will also facilitate comparisons with other provinces which may provide very useful information.

These new data will provide a much more powerful tool for the public and health professionals alike to more confidently evaluate and make references about the cancer experience of Nova Scotia.

Registration

In addition, information received from the Vital Statistics Department of Nova Scotia regarding deaths of cancer patients not previously registered, is reflected in these statistics.



D. H. Thomson, M.B., F.R.C.P. (C)
Director
Provincial Cancer Registry

Eric Mintz, Hons. B.Sc., M.Sc., PhD.
Chairman
Provincial Cancer Registry Committee

PRIMARY SITES WITH AGE BREAKDOWN (MALE - 1986)

SITE	ICD-O CODE	AGE BREAKDOWN 0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 - 89	90 +	NOT AVAL	TOTAL	INCID. PER 100,000	AGE ADJUSTED RATE**
Lip	140			1	1	3	5	9	7	5			31	7.24	
Tongue	141					1	1	4	1				7	1.63	
Mouth Other	142-145				1	1	3	9	2				16	3.74	
Pharynx;Tonsil	146-149					1	8	5	5	1		1	21	4.90	
Esophagus	150				1		3	10	6	2			22	5.14	
Stomach	151			1		4	9	19	27	9	3		72	16.81	15.20
Small Bowel	152			1		1	1	1	2				6	1.40	
Colon - Rectum	153-154				2	12	41	87	85	51	7	1	286	66.77	61.09
Liver; Gallbladder	155-156	1			1	1	5	6	5	2	1		22	5.14	
Pancreas	157				1	1	10	17	17	7	1		54	12.61	11.64
Peritoneum	158-159	1			2		1	2	3				9	2.10	
Nasal Cavities	160									1			1	0.23	
Larynx	161		1			1	11	12	9	5	1		40	9.34	
Lung; Pleura	162-163				4	11	70	149	135	35	1		405	94.55	86.77
Mediastinum	164														
Bone Marrow	169	1	2	1	1	4	15	18	17	6	3	1	69	16.11	
Bone; Soft Tissue	170-171	1	3	1	2	4	3	5	5	1			25	5.84	
Skin	173		2	3	24	45	110	202	199	74	20	19	698	162.95	
Melanomas		1		3	7	7	7	12	8	6	1	1	53	12.37	11.52
Breast	175						1	2	1				4	0.93	
Prostate	185					3	15	78	132	66	7		301	70.27	61.79
Testis	186			5	6	1							12	2.80	
Penis	187				1		2	2	2	1			8	1.87	
Bladder	188					1	15	34	41	21	1	1	114	26.61	
Kidney; Ureter	189			1	4	5	14	24	21	6	1		76	17.74	
Eye; Lacrimal Gland	190				1		2	2		1			6	1.40	
Brain; Nervous System	191-192	3	3	3	2	4	6	6	5	1			33	7.70	
Endocrine	193-194	1			1		1	3	2				8	1.87	
Lymph Nodes	196		3	2	5	10	6	20	9	8		1	64	14.94	13.91
Unknown Primary	199				3	2	11	19	20	11	3		69	16.11	
TOTAL		9	14	22	70	123	376	757	766	320	50	25	2532	591.11	538.88

** - AGE ADJUSTED RATES GIVEN FOR MAJOR SITES ONLY
(STANDARDIZED TO 1981 CANADIAN POPULATION)

PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

PRIMARY SITES WITH AGE BREAKDOWN (FEMALE - 1986)

SITE	ICD-O CODE	AGE BREAKDOWN 0 - 9	10 - 19	20 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 - 89	90 +	NOT AVAL	TOTAL	INCID. PER 100,000	AGE ADJUSTED RATE**
Lip	140								2	1			3	0.68	
Tongue	141									1			1	0.23	
Mouth Other	142-145					1	4	4	1	1	2		13	2.95	
Pharynx;Tonsil	146-149							5					5	1.13	
Esophagus	150						2	3	2	5			12	2.72	
Stomach	151					3	3	10	15	9	3		43	9.76	8.76
Small Bowel	152						1	1	3				5	1.13	
Colon - Rectum	153-154		1	1	5	13	30	61	98	53	10	1	273	61.97	55.94
Liver; Gallbladder	155-156							3	6	5	1		15	3.40	
Pancreas	157						5	11	15	13	1		45	10.21	9.24
Peritoneum	158-159					1	1	7	2				11	2.50	
Nasal Cavities	160							1		1			2	0.45	
Larynx	161						1	2	1				4	0.91	
Lung; Pleura	162-163				1	16	40	46	38	6	4		151	34.27	32.63
Mediastinum	164				2			1	1				4	0.91	
Bone Marrow	169	3	3	1		3	7	11	15	8	3		54	12.26	
Bone; Soft Tissue	170-171		2	1	1	2	2		3				11	2.50	
Skin	173			3	23	40	85	143	149	83	21	17	564	128.02	
Melenomas			1	4	7	10	11	8	9	3	1		54	12.26	11.83
Breast	174				26	55	92	96	110	38	12		429	97.38	91.83
Cervix Uteri	180			4	9	11	15	9	8	1			57	12.94	12.66
Ca. Insitu			1	90	77	17	3	4				8	200	45.40	
Corpus Uteri	182				2	4	18	21	14	10	2		71	16.12	
Ovary; Fallopian Tube	183			3	3	6	14	14	8	8	2		58	13.17	12.70
Other Female Genital				1	4	2		6	3	6			22	4.99	
Bladder	188						5	9	11	11			36	8.17	
Kidney; Ureter	189	2		1	2	3	10	4	13	4	3	1	43	9.76	
Eye; Lacrimal Gland	190						1		1				2	0.45	
Brain; Nervous System	191-192	1	2	3	2	4	1	11	6	1			31	7.04	
Endocrine	193-194		1		4	6	7	6	2	3		1	30	6.81	
Lymph Nodes	196	1	1	3	3	10	7	15	13	7	1		61	13.85	12.99
Unknown Primary	199				1	5	7	13	16	14	8		64	14.53	
TOTAL		7	12	115	172	212	372	525	565	292	74	28	2374	538.86	499.24

** - AGE ADJUSTED RATES GIVEN FOR MAJOR SITES ONLY
(STANDARDIZED TO 1981 CANADIAN POPULATION)

PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

INCIDENCE OF CANCER WITHIN AGE GROUPS

(MALES)

AGE BREAK DOWN	1986	
	ACTUAL # OF CASES	INCIDENCE PER 1000
0 - 9 YEARS	9	.1416
10 - 19 YEARS	14	.1973
20 - 29 YEARS	22	.2737
30 - 39 YEARS	70	1.023
40 - 49 YEARS	123	2.564
50 - 59 YEARS	376	9.974
60 - 69 YEARS	757	23.26
70 - 79 YEARS	766	36.91
80 - 89 YEARS	320	54.49
90+ YEARS	50	328.9
AGE UNAVAILABLE	25	
TOTAL	2532	5.91
AGE ADJUSTED RATE **		5.74

(** STANDARDIZED TO 1981 CANADIAN POPULATION)

INCIDENCE OF CANCER WITHIN AGE GROUPS

(FEMALES)

AGE BREAK DOWN	1986	
	ACTUAL # OF CASES	INCIDENCE PER 1000
0 - 9 YEARS	7	.1141
10 - 19 YEARS	12	.1791
20 - 29 YEARS	115	1.449
30 - 39 YEARS	172	2.460
40 - 49 YEARS	212	4.455
50 - 59 YEARS	372	9.468
60 - 69 YEARS	525	13.87
70 - 79 YEARS	565	21.14
80 - 89 YEARS	292	26.69
90+ YEARS	74	138.1
AGE UNAVAILABLE	28	
TOTAL	2374	5.39
AGE ADJUSTED RATE **		5.26

(** STANDARDIZED TO 1981 CANADIAN POPULATION)

AGE DISTRIBUTION TABLES

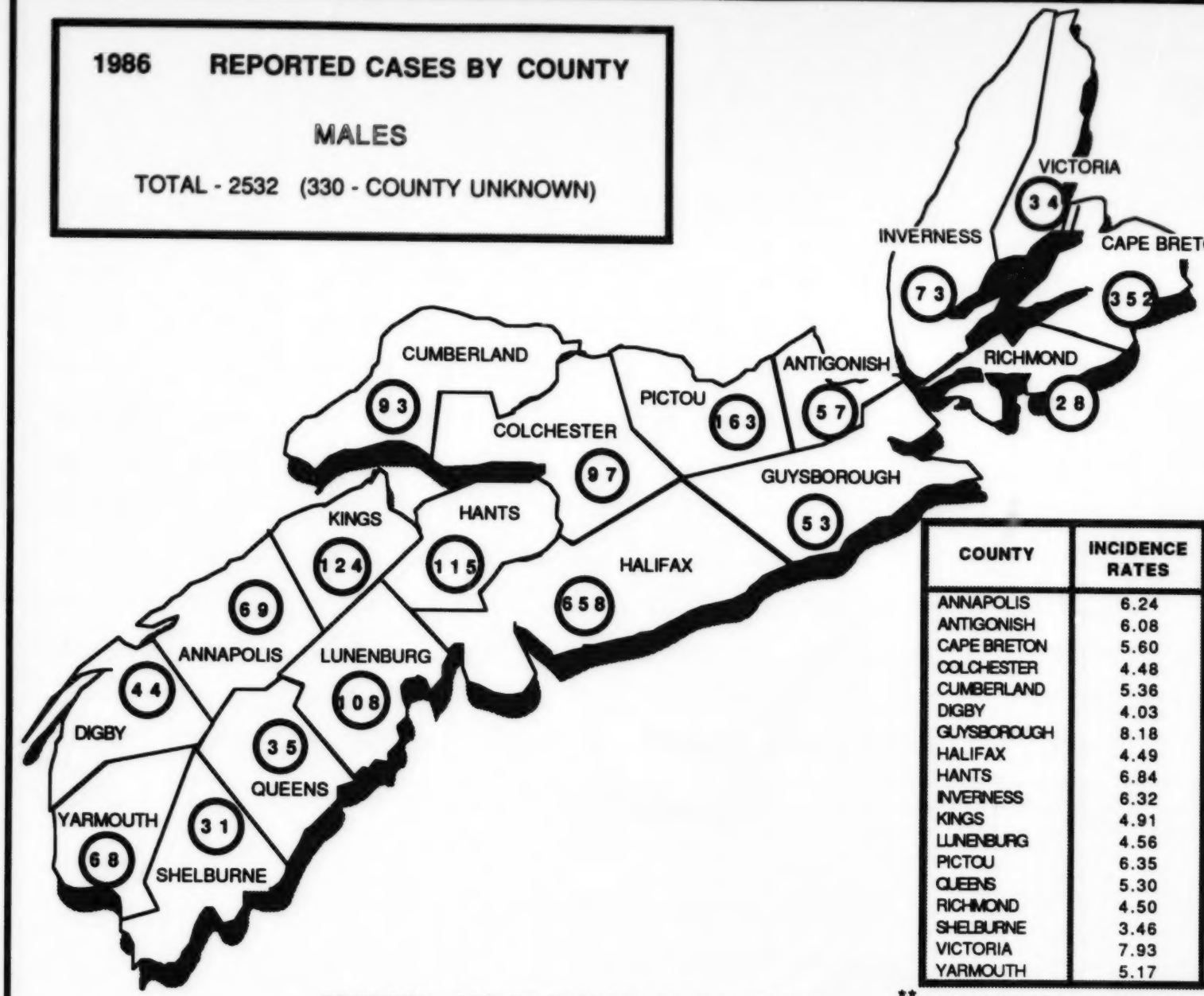
(USED IN 1986 INCIDENCE CALCULATIONS)

AGE BREAK DOWN	1986 NOVA SCOTIA			STANDARD 1 1981 NOVA SCOTIA			STANDARD 2 1981 CANADA		
	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL	MALES	FEMALES	TOTAL
0 - 9	63,576	61,333	**124,909**	64,735	61,835	**126,570**	1,826,390	1,733,845	**3,560,235**
10 - 19	70,947	66,988	**137,935**	80,970	76,710	**157,680**	2,166,755	2,069,005	**4,235,760**
20 - 29	80,384	79,367	**159,751**	74,360	75,235	**149,595**	2,258,705	2,262,720	**4,521,425**
30 - 39	68,435	69,924	**138,359**	61,065	60,325	**121,390**	1,843,775	1,825,055	**3,668,830**
40 - 49	47,978	47,591	**95,569**	42,350	41,845	**84,195**	1,309,370	1,283,885	**2,593,255**
50 - 59	37,697	39,291	**76,988**	37,955	40,255	**78,210**	1,190,045	1,233,345	**2,423,390**
60 - 69	32,549	37,857	**70,406**	33,195	37,120	**70,315**	852,970	970,680	**1,823,650**
70 - 79	20,755	26,732	**47,487**	18,470	22,740	**41,210**	461,705	604,365	**1,066,070**
80 - 89	5,873	10,940	**16,813**	5,640	9,965	**15,605**	138,950	248,780	**387,730**
90+	152	536	**688**	830	1,855	**2,685**	19,610	43,235	**62,845**
TOTAL	428,346	440,559	**868,905**	419,570	427,885	**847,455**	12,068,275	12,274,915	**24,343,190**

1986 REPORTED CASES BY COUNTY

MALES

TOTAL - 2532 (330 - COUNTY UNKNOWN)



COUNTY	INCIDENCE RATES	AGE ** ADJUSTED RATES
ANNAPOLIS	6.24	4.98
ANTIGONISH	6.08	7.01
CAPE BRETON	5.60	5.64
COLCHESTER	4.48	4.03
CUMBERLAND	5.36	4.21
DIGBY	4.03	3.19
GUYSBOROUGH	8.18	6.75
HALIFAX	4.49	5.51
HANTS	6.84	6.94
INVERNESS	6.32	6.38
KINGS	4.91	4.74
LUNENBURG	4.56	3.83
PICTOU	6.35	6.03
QUEENS	5.30	4.09
RICHMOND	4.50	4.17
SHELBURNE	3.46	3.20
VICTORIA	7.93	6.85
YARMOUTH	5.17	4.49

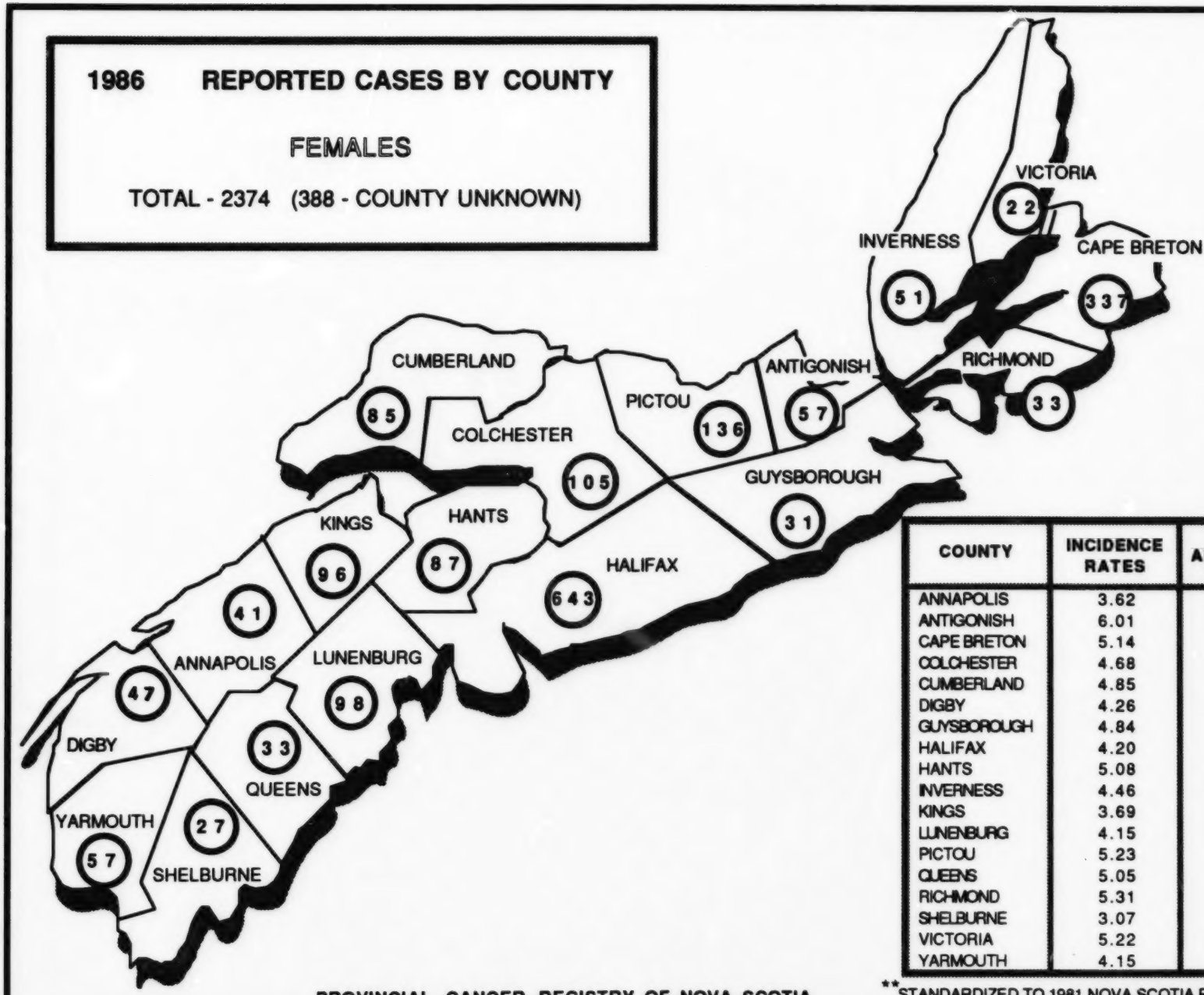
PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

**STANDARDIZED TO 1981 NOVA SCOTIA POPULATION

1986 REPORTED CASES BY COUNTY

FEMALES

TOTAL - 2374 (388 - COUNTY UNKNOWN)



COUNTY	INCIDENCE RATES	AGE ** ADJUSTED RATES
ANNAPOLIS	3.62	2.97
ANTIGONISH	6.01	6.62
CAPE BRETON	5.14	4.93
COLCHESTER	4.68	4.27
CUMBERLAND	4.85	3.65
DIGBY	4.26	3.63
GUYSBOROUGH	4.84	4.59
HALIFAX	4.20	4.60
HANTS	5.08	5.12
INVERNESS	4.46	4.54
KINGS	3.69	3.61
LUNENBURG	4.15	3.53
PICTOU	5.23	4.84
QUEENS	5.05	4.40
RICHMOND	5.31	5.21
SHELBURNE	3.07	2.96
VICTORIA	5.22	4.81
YARMOUTH	4.15	3.75

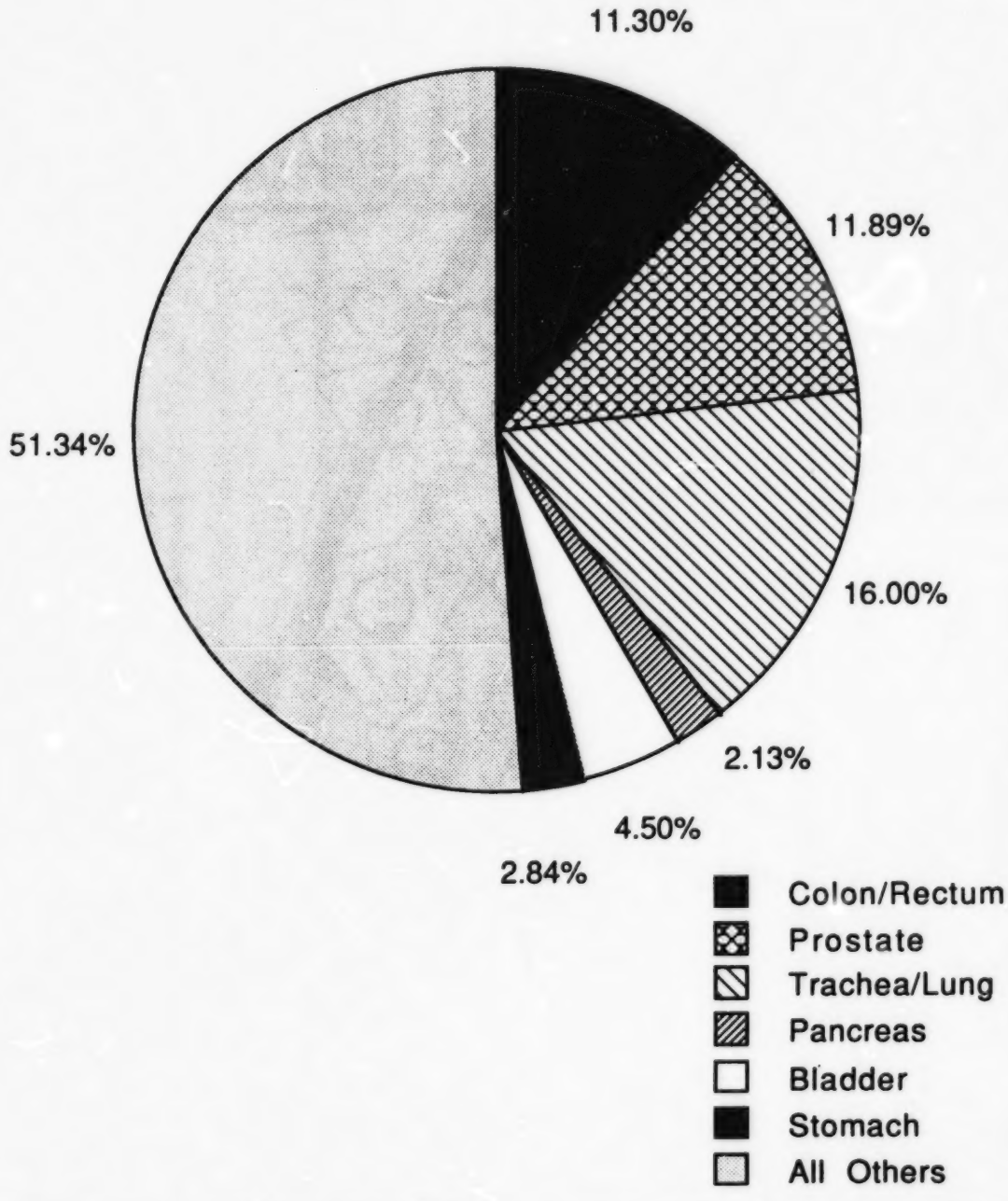
PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

** STANDARDIZED TO 1981 NOVA SCOTIA POPULATION

Principal Primary Sites

Registrations of 1986

MALES (2532)

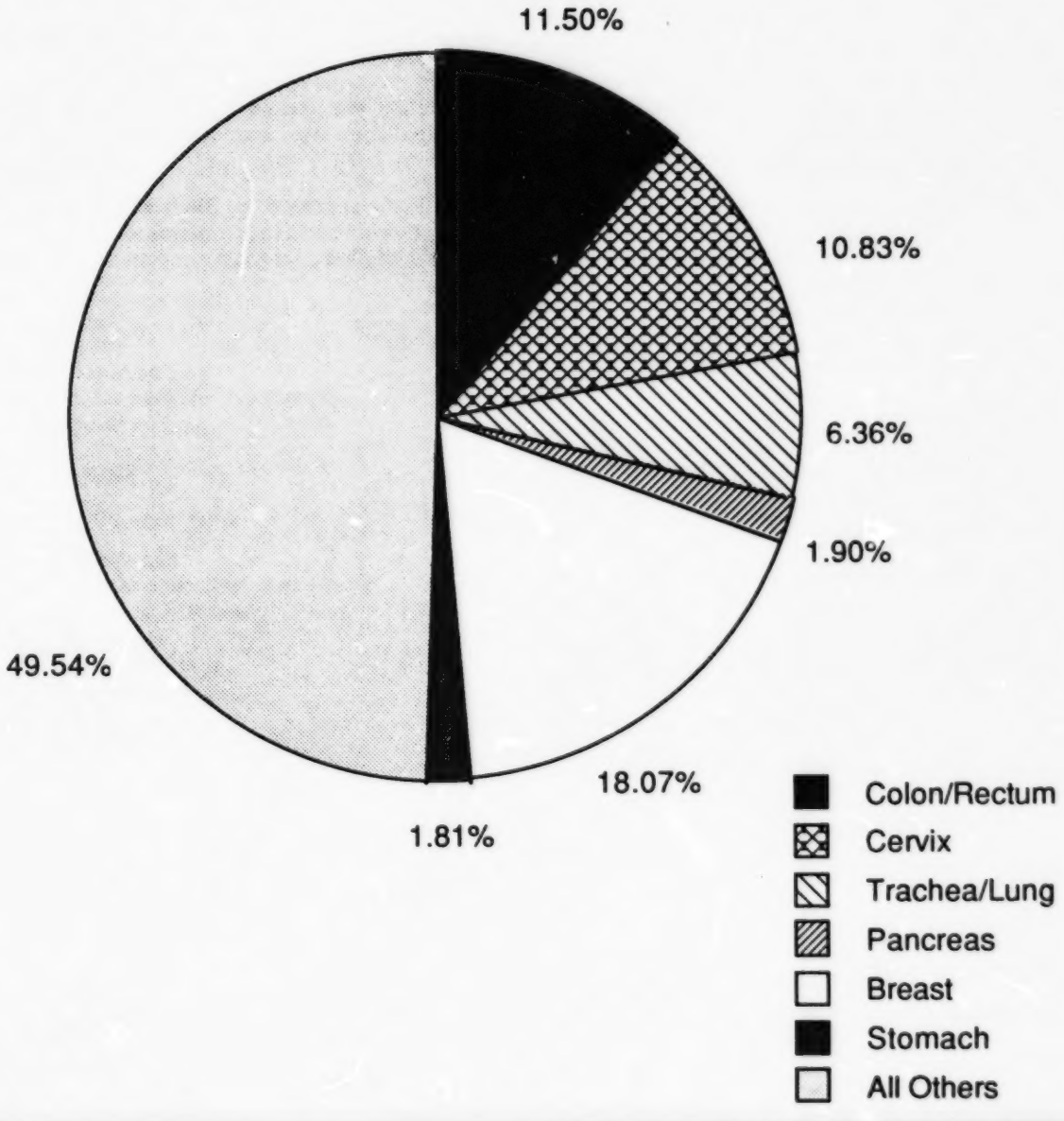


PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

Principal Primary Sites

Registrations of 1986

FEMALES (2374)



PROVINCIAL CANCER REGISTRY OF NOVA SCOTIA

CANCER TREATMENT AND RESEARCH FOUNDATION OF NOVA SCOTIA

FINANCIAL STATEMENTS

Year Ended March 31, 1987

AUDITOR'S REPORT

To the Chairman and Members
of the Cancer Treatment and
Research Foundation of Nova Scotia

I have examined the balance sheet of the Cancer Treatment and Research Foundation of Nova Scotia as at March 31, 1987 and the statements of general fund revenues and expenses and continuity of special fund for the year then ended. My examination was made in accordance with generally accepted auditing standards and accordingly, included such tests and other procedures as I considered necessary in the circumstances.

In my opinion, these financial statements present fairly the financial position of the Foundation as at March 31, 1987 and the results of its operations for the year then ended in accordance with the accounting policies stated in Note 2 to the financial statements, applied on a basis consistent with that of the preceding year.

O.P. Cormier, F.C.A.
Auditor General

Halifax, Nova Scotia
July 17, 1987

BALANCE SHEET

As at March 31, 1987

ASSETS

General Fund	1987	1986
Short term investments	$ 260,530	$ 239,836
Accounts receivable	304,864	225,062
Employee advances	8,047	4,350
Prepaid expenses	75,643	101,333
Due from the Province of Nova Scotia Year end settlement account (Note 3)	241,756	312,465
Due from Special Fund	95,504	23,940
	$ 986,344	$ 906,986
Special Fund		
Cash	$ 58,500	$ 25,167
Short term investments	265,038	194,345
Accounts receivable	32,498	42,710
	$ 356,036	$ 262,222

LIABILITIES AND FUND BALANCES

General Fund		
Bank overdraft	$ 73,683	$ 25,690
Accounts payable and accruals	774,261	758,896
Unearned income	138,400	122,400
	$ 986,344	$ 906,986
Special Fund		
Due to General Fund	$ 95,504	$ 23,940
Fund Balances		
Radiation Oncology Trust Fund	5,445	6,864
Tumor Clinic Research Fund	2,791	2,791
Trial Funds	(1,567)	10,909
Restricted Funds	36,525	41,525
Unrestricted Funds	217,338	176,193
	$ 260,532	$ 238,282
	$ 356,036	$ 262,222

GENERAL FUND
Statement of Revenues and Expenses

For the Year Ended March 31, 1987

	1987	1986
Revenues		
Nova Scotia Department of Health		
Insured Services	$ 3,321,600	$ 2,937,600
Capital equipment	56,569	51,737
Hosptial services	922,850	895,279
Reciprocal billings	71,845	71,695
Non-insured services	28,711	21,054
Other	13,703	6,054
	4,415,278	3,983,419
Expenses		
Nursing services	644,715	583,870
Technical services	359,711	338,982
Laboratory services	82,118	86,372
Radiation oncology services	591,864	493,844
Medical oncology services	304,398	199,550
Epidemiology services	29,822	9,445
School services	28,498	27,843
Medical physics	664,230	637,261
Health records	530,187	522,666
Clinic administration	763,290	733,845
Administration	407,191	372,566
Data processing	95,645	111,448
Research and development	7,000	10,031
Capital equipment	56,569	51,737
	4,565,238	4,179,460
Shareable deficit	$ 149,960	$ 196,041

CONTINUITY OF SPECIAL FUND

For The Year Ended March 31, 1987

	Radiation Oncology Trust Fund	Tumor Clinic Research Fund	Trial Funds	Restricted Funds	Unrestricted Funds	Total
Balance, beginning of year	$ 6,864	$ 2,791	$ 10,908	$ 41,525	$ 176,193	$ 238,281
Add: Donations	—	—	41,662	—	12,986	54,648
Investment income	480	—	—	—	43,373	43,853
	480	—	41,662	—	56,359	98,501
Less: Clinical research	—	—	54,137	—	—	54,137
Research grant	—	—	—	—	13,600	13,600
Bad debt expense	—	—	—	—	1,611	1,611
Other expense	1,899	—	—	5,000	3	6,902
	1,899	—	54,137	5,000	15,214	76,250
Balance, end of year	$ 5,445	$ 2,791	$ (1,567)	$ 36,525	$ 217,338	$ 260,532

NOTES TO FINANCIAL STATEMENTS

March 31, 1987

1. **Authority**

The Cancer Treatment and Research Foundation of Nova Scotia was established by the Cancer Treatment and Research Foundation Act which was proclaimed on November 25, 1980.

The objects of the Foundation are to operate multidisciplinary facilities for the diagnosis and treatment of cancer and research into problems relating to cancer, and related assistance, educational and training matters.

2. **Accounting Policies**

These financial statements have been prepared in accordance with generally accepted accounting principles modified by the policy of charging furniture and equipment purchases to expense in the year of acquisition. This expense is charged to the General Fund.

3. **Due From the Province of Nova Scotia**

The shareable deficit in the General Fund is recoverable from the Province of Nova Scotia. The year end settlement account balance represents the amount of accumulated shareable deficits of the Foundation receivable at fiscal year end.

The balance due from the Province at year end is dependent upon the approval of the Department of Health based upon their review of the Foundation's final settlement claim.